HIV Risk Behaviors Among Male-to-Female Transgender Persons of Color in San Francisco

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Objectives. The authors examined HIV risk behaviors among African American, Asian/Pacific Islander (API), and Latina male-to-female (MTF) transgender persons in order to improve HIV prevention programs.

Methods. Individual survey interviews with MTF transgender persons of color (n = 332; 112 African Americans, 110 Latinas, and 110 APIs) were conducted.

Results. Prevalence and correlates of receptive anal sex and unprotected receptive anal sex (URAS) varied by type of partner (primary, casual, or commercial sex partners). URAS with primary partners was associated with drug use before sex; URAS with casual partners was associated with HIV-positive status and drug use before sex; and URAS with commercial sex partners was associated with African American ethnicity and low income.

Conclusions. Findings on current risk behaviors among MTF transgender persons provided meaningful implications for HIV prevention interventions. (*Am J Public Health.* 2004;94:1193–1199)

Male-to-female (MTF) transgender persons are individuals who experience discomfort with their biological male gender and identify instead as women. Members of this population confront multiple health risks,[1] with HIV/AIDS constituting a particularly overwhelming social and medical issue. Estimates of HIV prevalence in the MTF transgender population range from 11% to 78%.[2–9] However, few evidence-based transgender-specific HIV interventions exist.[10,11]

San Francisco, a city known for acceptance of sexual diversity, has a large, multicultural MTF transgender population. Data from anonymous HIV testing sites in San Francisco indicated an incidence rate of 7.8 per 100 person-years—the highest for any risk group in the city.[12] Ethnic differences in HIV seroprevalence among MTF transgender persons have been reported in studies conducted in San Francisco and Los Angeles.[2,8,12] African Americans showed the highest HIV seroprevalence (44%–63%), followed by Latinas (26%–29%), Whites (16%–22%), and Asian/Pacific Islanders (APIs) (4%–27%). Correlates of HIV-positive status include ethnicity (i.e., being African American), socioeconomic status (i.e., having less than a high school degree), lifetime sexual partners (i.e., >200 partners), and lifetime history of injection drug use.[2] Furthermore, HIV-positive participants were more likely than HIV-negative participants to report unprotected receptive anal sex (URAS) with primary partners and injection drug use in the past 6 months.[2]

Qualitative research has explored the social and ecological context for HIV vulnerability among MTF transgender persons, revealing that socioeconomic and psychological adversity contribute to the high prevalence of HIV-related risk behaviors.[13] Because of discrimination and stigma, many MTF transgender persons lack employment, live below the poverty threshold, and engage in high-risk sex work.[14] Psychosocial consequences of stigma described by MTF transgender persons, including depression and poor self-esteem, contribute to low negotiation power in relationships with primary partners and low self-efficacy to negotiate safe sex.[15] Focus group findings suggested that some MTF transgender persons engage in casual sex with multiple partners to affirm their female gender identities and engage in substance use to cope with stress associated with sex work and depression.[15]

In this article we investigate correlates of recent HIV-related risk behaviors in a sample of African American, Latina, and API male-to-female transgender persons in San Francisco. We focus on understanding current HIV-related risk behaviors to identify factors that can be addressed in behavioral interventions aiming to reduce future infections and transmissions. Many previous studies with MTF transgender persons using HIV status as an outcome have implied causal linkages between participants' risk behaviors and current HIV status; however, it is likely that for many HIV-positive subjects, HIV infection preceded (and may lead to an increase in) recent risk behaviors. One study showed that 65% of MTF transgender persons who tested positive for HIV already knew their HIV status and that 58% of HIV-positive transgender persons were currently receiving HIV antiretroviral therapy.[2] Therefore, treating current HIV status as an outcome may not be appropriate and does not provide meaningful implications for future risk reduction interventions. The authors investigated the association of recent HIV risk behaviors among MTF transgender persons of color with demographic characteristics (including race, age, income, preoperative/postoperative status), sexual behaviors (with primary partners, casual sex partners, or commercial sex partners), sex under the influence of alcohol and drugs, and HIV/sexually transmitted disease (STD) status.

METHODS

Procedure and Sample

This research used a two-stage approach. The first stage involved qualitative research that prepared us for the second stage of individual survey interviews. We held a series of focus groups with 48 MTF transgender persons of color, interviewed key informants in the San Francisco MTF transgender community, and mapped social spaces frequented by MTF transgenders.[16] On the basis of qualitative research findings, we developed a survey that was sensitive to life experiences of MTF transgender persons of color in San Francisco.

Forty MTF transgender persons completed a pilot version of the survey and provided feedback regarding cultural appropriateness, clarity, and ease of completion. On the basis of their feedback, we finalized the questionnaire. The informed consent form and questionnaire were translated into Spanish and unclear parts were back-translated to ensure the comparability between English and Spanish.

Between November 2000 and July 2001, a team of MTF transgender interviewers recruited participants from a range of community venues identified through mapping. Four San Francisco AIDS service organizations with transgender-specific programs referred 46% of the sample. To be considered eligible for the study, each participant had to (1) identify as an MTF transgender person (including pre- and postoperative status); (2) identify as African American, API, or Latina; (3) have a history of exchanging sex for money or drugs; and (4) be 18 years of age or older. Those who fulfilled eligibility criteria voluntarily met with a MTF transgender interviewer (matched by ethnicity) in a private interview space either in the project office or at collaborating agencies. Using a protocol approved by the University of California, San Francisco committee on human research, interviewers obtained informed consent orally and administered the survey. Latinas completed the survey in Spanish or English with the bilingual Latina interviewer. Upon completing surveys, participants received financial reimbursement, a safe-sex kit, and a list of agencies with services for transgenders.

Measures

Sexual behaviors. Participants reported sexual behaviors with 3 types of male partners: primary, casual, and commercial. Primary partners were defined as persons with whom participants had a relationship, such as boyfriends or spouses. Casual partners were defined as nonpaying private partners with whom participants engaged in casual sex, such as 1-night stands. Commercial sex partners were defined as customers who paid for sex.

For each type of partner, participants reported whether in the past 30 days they had engaged in receptive anal sex (partner puts penis in participant's anus) and whether they had ever engaged in unprotected receptive anal sex (URAS) with each type of partner during the past 30 days. Variables were dichotomized as follows: not engaging in the behavior versus engaging in the behavior.

Health outcomes. Participants indicated whether they had ever been tested for HIV and the result of their last test, as well as whether they had ever tested positive for any of 6 STDs (i.e., chlamydia, genital warts, gonorrhea, herpes, syphilis, and trichomoniasis) in the past 12 months. These were dichotomized into 2 variables: HIV status (negative=0, positive=1), and recent STD history (none in the past 12 months=0, any in the past 12 months=1).

Substance use. Measures of substance use were modified from the National Institute of Drug Abuse *Risk Behavior Assessment.*[17] We focused here on only 3 variables; that is, whether they had sex with primary, casual, or commercial partners under the influence of any illicit drug in the past 30 days (no sex under the influence in the past 30 days=0; any sex under the influence in the past 30 days=1).

Statistical Analysis

A Pearson χ^2 test was conducted to assess associations between ethnicity and categorized demographics, HIV status, and STD status. Multivariate logistic regression was performed to identify predictors on each of 6 binary outcome measures: receptive anal sex with primary partner, casual partners, and commercial partners; and URAS with primary partner, casual partners, and commercial partners. Our goal was to achieve a parsimonious model while satisfying good fit. Before modeling, we listed theoretically important and interesting predictors and cross-tabulated them with each of the 6 outcome measures. After the procedures described by Hosmer and Lemeshow,[18] variables with statistically significant levels less than .25 by Pearson χ^2 test were selected as candidates to enter the multivariate logistic model. A backward stepwise procedure was then used to remove those predictors with an adjusted statistically significant level greater than .20. Finally, the Hosmer–Lemeshow goodness-of-fit test was used to assess model fit. All analyses were conducted using SPSS (SPSS Inc; Chicago, Ill).

RESULTS

Demographics

Three hundred thirty-two MTF transgender persons (112 African American, 110 Latina, and 110 API) completed the survey (Table 1). More than half of the sample was foreign born. Among Latinas, most were born in Mexico (52%), followed by the Caribbean (16%), South and Central America (13%), and Spain (1%); 18% of Latinas were born in the United States. Among APIs, most were born in the Philippines (54%), followed by Southeast Asia (26%), South Korea (2%), and China or Hong Kong (2%); 14% of APIs were born in the United States. The average age was 34 years (range 18–60 years of age). Over one third of the sample did not complete high school; 54% earned less than $1000 in the past 30 days, and under half (49%) had permanent housing during the past 6 months. The 3 most common self-identified genders were female (36%), preoperative transgender (31%), and preoperative transsexual (21%). Few had undergone sexual reassignment surgery; among them, 73% identified as female and 24% as postoperative transsexual. A majority identified as heterosexual.

Latinas and APIs were more likely than African Americans to be foreign born (Table 1). African Americans were older (mean=36.5 years) than Latinas (mean=32.9) or APIs (mean=32.9) ($P<.05$). Latinas had relatively little education; 61% of Latinas had not completed high school, whereas 64% of APIs had completed at least some college. Latinas were most likely to currently engage in sex work. APIs were more likely to have a full-time job, higher income, and permanent housing than other ethnic groups. APIs were most likely to have had sex reassignment surgery and to identify as female.

Health Outcomes

Ninety-eight percent of the MTF transgender sample reported having ever tested for HIV. Of those who had been tested, 26% reported being HIV-positive. Another 68% reported being HIV-negative; 4% were unsure and 1% refused to report their status. Fourteen percent reported testing positive for any STD during the past 12 months, including herpes (5%), gonorrhea (4%), genital warts

TABLE 1—Demographics and HIV/STD Prevalence Rates, by Ethnicity

	Total (n = 332), No. (%)	African American (n = 112), No. (%)	Latina (n = 110), No. (%)	API (n = 110), No. (%)	P[a]
Born outside US	191 (58)	6 (5)	90 (82)	95 (86)	.00
Age group, y					.01
18–30	119 (36)	27 (24)	47 (43)	45 (41)	
31–40	137 (41)	50 (45)	39 (35)	48 (44)	
41–60	75 (23)	34 (31)	24 (22)	17 (15)	
Highest education level					.00
Less than high school	122 (37)	35 (31)	67 (61)	20 (18)	
High school/technical/GED	92 (28)	43 (38)	29 (26)	20 (18)	
Some college	84 (25)	27 (24)	9 (8)	48 (44)	
College and above	34 (10)	7 (6)	5 (5)	22 (20)	
Income source(s) in past 6 mo[b]					
Full-time job	92 (28)	18 (16)	24 (22)	50 (45)	.00
Prostitution	170 (51)	56 (50)	79 (72)	35 (32)	.00
Income in past 30 days, $					.00
0–499	64 (20)	15 (13)	36 (33)	13 (12)	
500–999	110 (34)	51 (46)	35 (32)	24 (22)	
1000–1999	70 (21)	31 (28)	15 (14)	24 (22)	
2000 and above	84 (26)	15 (13)	22 (20)	47 (44)	
Housing situation past 6 mo					.00
Permanent housing	157 (49)	43 (40)	46 (43)	68 (64)	
Temporary housing	147 (46)	55 (51)	54 (51)	38 (36)	
Homeless (shelter, street)	16 (5)	9 (8)	6 (5)	1 (1)	
Gender identity					.00
Female	119 (36)	44 (39)	12 (11)	63 (57)	
Preoperative transgender/ transsexual	173 (52)	65 (58)	77 (70)	31 (28)	
Other[c]	40 (12)	3 (3)	21 (19)	16 (15)	
Had sex reassignment surgery	33 (10)	7 (6)	9 (8)	17 (15)	.05
Sexual orientation					.60
Heterosexual	277 (85)	95 (88)	88 (82)	94 (86)	
Homosexual	34 (10)	8 (7)	14 (13)	12 (11)	
Bisexual	15 (5)	5 (5)	6 (6)	4 (4)	
HIV-positive status	86 (26)	47 (41)	25 (23)	14 (13)	.00
Any STD, past 12 mo	46 (14)	20 (18)	21 (19)	5 (4)	.00

Note. GED = general equivalency degree.
[a]*P* values are associated with χ^2 tests with $df = 2(R - 1)$, where R is the number of categories for each variable.
[b]Income sources not mutually exclusive.
[c]Other includes transvestite, androgynous, postoperative transgender, cross-dresser, "gender bender," "drag queen."

(3%), syphilis (3%), chlamydia (2%), and trichomoniasis (1%).

Self-reported HIV status varied significantly by ethnicity (Table 1). African Americans were more likely than Latinas and APIs to report having HIV, and African Americans and Latinas were both more likely than APIs to report having any STD in the past 12 months.

Sex Under the Influence of Drugs

Sex while under the influence of illicit drugs was common. Among participants who reported having a primary partner, 55% engaged in sex with them while under the influence of drugs during the past 30 days; the rate was highest among African Americans (63%) and Latinas (60%) compared with APIs (41%) ($\chi^2 = 6.49$, $P < .05$). Close to half (45%) of the participants who had casual partners reported having sex with them under the influence of drugs during the past 30 days; the rate was highest among African Americans (71%), followed by Latinas (53%) and APIs (43%) ($\chi^2 = 5.98$, $P < .05$). Roughly half (52%) of the participants who had sex with commercial partners reported having sex with them while under the influence of drugs in the past 30 days, with no significant ethnic group differences.

Sexual Behaviors

Receptive anal sex. In the past 30 days, 52% of the sample reported having had a primary partner, 36% at least 1 casual partner, and 40% at least 1 commercial partner. Among those who reported having each respective partner, 77% had receptive anal sex with a primary partner, 71% had receptive anal sex with a casual partner, and 74% had receptive anal sex with a commercial partner. Table 2 shows bivariate associations between these 3 sexual behaviors and demographics, STD history, HIV status, and sexual risk factors in the past 30 days.

Multivariate logistic regression analysis was conducted on each of the 3 outcome variables: receptive anal sex with primary, casual, and commercial partners during the past 30 days (Table 2). Models for primary and commercial sex partners showed adequate goodness of fit. Significant predictors of receptive anal sex with a primary partner were being African American or Latina relative to API, being 18 to 30 years of age relative to 41 to 60 years of age, having an income less than $500 relative to $500 to $999 during the past 30 days, and ever having had sex while under the influence of drugs during the past 30 days. Significant predictors of receptive anal sex with casual partners were being Latina relative to API, not having had sex reassignment surgery, and ever having had sex while under the influence of drugs during the past 30 days. Significant predictors of receptive anal sex with commercial partners were being Latina, having an STD in the past year,

TABLE 2—Receptive Anal Sex in the Past 30 Days, by Partner Type

	Primary			Casual			Commercial		
	No.	% Yes	Adjusted OR (95% CI)[a]	No.	% Yes	Adjusted OR (95% CI)[a]	No.	% Yes	Adjusted OR (95% CI)[a]
Overall	173	76.6		119	71.4		132	74.2	
Demographics									
Ethnicity									
African American	67	**82.1**	6.6**(2.1, 21.3)	35	**71.4**	1.1 (0.3, 3.9)	44	**68.2**	1.7 (0.6, 5.2)
Latina	50	**90.0**	13.4**(3.0, 59.0)	49	**83.7**	4.1*(1.3, 13.6)	59	**84.6**	6.2**(1.8, 21.2)
Asian/Pacific Islander	56	**58.9**	1.0	35	**54.3**	1.0	29	**58.6**	1.0
Age group									
18–30	63	**88.9**	7.4** (1.8, 30.4)	50	**78.0**	[b]	67	74.6	[d]
31–40	69	**73.9**	1.4 (0.4, 4.4)	50	**70.0**		48	77.1	
41–60	41	**63.4**	1.0	19	**57.9**		17	64.7	
Income past 30 days, $									
0–499	32	**90.6**	5.4* (1.0, 29.6)	27	**81.5**	2.2 (0.6, 8.2)	25	**68.0**	0.6 (0.2, 2.1)
500–999	50	**72.0**	1.0	38	**60.5**	1.0	39	**66.7**	1.0
1000 or over	89	**74.2**	3.0 (0.9, 10.0)	54	**74.1**	3.3* (1.1, 10.1)	68	**80.3**	2.4 (0.9, 6.8)
Had reassignment surgery									
Yes	21	**38.1**	1.0	9	**44.4**	1.0	5	60.0	[d]
No	152	**82.2**	2.7 (0.8, 9.2)	110	**73.6**	7.2* (1.2, 42.3)	127	74.8	
STD history									
Any STD past 12 mo									
Yes	30	83.3	[d]	22	**86.4**	[b]	28	**89.3**	4.7* (1.2, 18.2)
No	143	75.5		97	**68.0**		104	**70.2**	1.0
HIV status									
Positive	49	79.6	[d]	27	**81.5**	3.6 (0.9, 14.3)	20	65.0	[d]
Negative/don't know	124	75.8		92	**68.5**	1.0	112	75.9	
Sex risk factors in past 30 days									
Had primary partner									
Yes	173	76.6	[c]	60	70.0	[d]	62	75.8	[d]
No	0	0.0		59	72.9		70	72.9	
Had casual partner									
Yes	60	81.7	[d]	119	71.4	[c]	59	78.0	[d]
No	113	74.3		0	0.0		73	71.2	
Had commercial partner									
Yes	62	**87.1**	[b]	59	**81.4**	2.2 (0.9, 5.9)	132	74.2	[c]
No	110	**70.9**		58	**60.3**	1.0	0	0.0	
Drug use during sex									
Yes	95	**90.5**	6.2***(2.2, 17.2)	66	**81.5**	2.9* (1.1, 7.7)	75	**81.3**	2.5* (1.0, 5.9)
No	78	**60.3**	1.0	53	**58.5**	1.0	57	**64.9**	1.0
Hosmer–Lemeshow goodness-of-fit, χ^2 (df), *P*			7.2 (8), .52			14.1 (8), .08			11.2 (8), .19

Note. OR = odds ratio; CI = confidence interval. Boldface = $P < .25$ in bivariate χ^2 tests and factor is qualified to be entered in multiple logistic model.
[a]Adjusted for those variables in the final model.
[b]Variables are excluded in the final model in backward stepwise selection procedure, adjusted $P > .20$.
[c]Not applicable.
[d]Variables are not entered in the model.
*$P < .5$; **$P < .01$; ***$P < .001$.

and ever having had sex while under the influence of drugs during the past 30 days.

URAS. Of the participants who had engaged in receptive anal sex with each respective partner during the past 30 days, 47% had URAS with a primary partner, 26% had URAS with a casual partner, and 12% had URAS with a commercial partner. Table 3 shows bivariate associations between these 3 sexual behaviors and demographics, STD history, HIV status, and sexual risk factors in the past 30 days.

TABLE 3—Unprotected Receptive Anal Sex in the Past 30 Days by Partner Type

	Primary			Casual			Commercial		
	No.	% Yes	Adjusted OR (95% CI) [a]	No.	% Yes	Adjusted OR (95% CI) [a]	No.	% Yes	Adjusted OR (95% CI) [a]
Overall	133	46.6		85	25.9		98	12.2	
Demographics									
Ethnicity									
African American	55	43.6	[c]	25	**44.0**	[b]	30	**23.3**	4.5*(1.1, 17.9)
Latina	45	42.2		41	**17.1**		51	**7.8**	1.0
Asian/Pacific Islander	33	57.6		19	**21.4**		17	**5.9**	[d]
Age									
18–30	56	44.6	[c]	39	20.5	[c]	50	8.0	[c]
31–40	51	49.0		35	31.4		37	16.2	
41–60	26	46.2		11	27.3		11	18.2	
Income past 30 days, $									
0–499	29	41.4	[c]	22	18.2	[c]	17	**29.4**	8.5*(1.6, 44.2)
500–999	36	50.0		23	34.8		26	**15.4**	2.3 (0.5, 11.8)
1000 or over	66	47.0		40	25.0		53	**5.7**	1.0
Had reassignment surgery									
Yes	8	**25.0**	[b]	4	25.0	[c]	0	0.0	[c]
No	125	**48.0**		81	25.9		95	12.6	
STD history									
Any STD past 12 mo									
Yes	25	56.0	[c]	19	**42.1**	[b]	25	16.0	[c]
No	108	44.4		66	**21.2**		73	11.0	
HIV status									
Positive	39	48.7	[c]	22	**40.9**	3.8* (1.1, 12.4)	13	**23.1**	[b]
Negative/don't know	94	45.7		63	**20.6**	1.0	85	**10.6**	
Sex risk factors in the past 30 days									
Had primary partner									
Yes	131	46.6	[e]	42	**35.7**	2.8 (1.0, 8.3)	47	**17.0**	[b]
No	0	0.0		43	**16.3**	1.0	51	**7.8**	
Had casual partner									
Yes	49	44.9	[c]	85	25.9	[e]	46	8.7	[c]
No	84	47.6		0	0.0		52	15.4	
Had commercial partner									
Yes	54	**53.7**	[b]	48	20.8	[c]	98	12.2	[e]
No	78	**41.0**		35	31.4		0	0.0	
Drug use during sex									
Yes	86	**53.5**	2.2* (1.0, 4.6)	54	**31.5**	3.5* (1.0, 12.4)	61	14.8	[c]
No	47	**34.0**	1.0	31	**16.1**	1.0	37	8.1	
Hosmer–Lemeshow goodness-of-fit, χ^2 (df), *P*			[e]			5.2 (5), 0.39			0.1 (4), 0.99

Note. OR = odds ratio; CI = confidence interval; STD, sexually transmitted disease. Boldface = $P < .25$ in bivariate χ^2 tests and factor is qualified to be entered in multiple logistic model.
[a]Adjusted for those variables in the final model.
[b]Variables are excluded in the final model in backward stepwise selection procedure, adjusted $P > .20$.
[c]Variables are not entered in the model.
[d]Latina and Asian/Pacific Islander are combined as a reference group.
[e]Not applicable.
*$P < .5$; **$P < .01$.

Multivariate logistic regression analysis was conducted on each of the 3 outcome variables: URAS with primary, casual, and commercial partners during the past 30 days (Table 3). Models for casual and commercial sex partners showed adequate goodness of fit. The only predictor of URAS with a primary partner in the past 30 days was having sex while under the influence of drugs during the past 30 days. Significant predictors of URAS with a casual partner were being HIV-positive and having had sex while under the influence of drugs

during the past 30 days. Significant predictors of URAS with a commercial partner were being African American and having an income of less than $500 during the past 30 days relative to $1000 or more.

DISCUSSION

This research offers implications for HIV prevention work for MTF transgender persons of color. Major findings are as follows: (1) about three quarters of the participants had recently engaged in receptive anal sex with primary, casual, and commercial sex partners, with no significant differences between types of partners found; (2) a significantly higher proportion had recently engaged in URAS with primary partners than with casual and commercial sex partners; (3) current URAS with primary and casual partners, but not commercial partners, was significantly and independently correlated with having had sex under the influence of drugs; (4) HIV-positive participants were 3.8 times more likely to have recently engaged in URAS with casual partners than HIV-negative participants, after control for other variables; and (5) although only 12% had reported URAS with commercial partners in the past 30 days, this risk behavior was significantly and independently correlated with African American race (4.5 times more compared with non–African Americans) and lowest income level (<$500 of monthly income).

MTF transgender persons of color in this study reported high levels of HIV and STDs. Self-reported HIV rates in this study were very similar to findings reported in a previous study that used serological HIV testing. Self-reported prevalence here was 41% African American, 23% Latina, and 13% API; serological prevalence in another study in San Francisco was 63% African American, 29% Latina, and 25% others (two thirds of which were APIs).[2] These prevalence estimates are comparable to HIV levels among gay men at the height of the epidemic in the 1980s.[12]

Rates of URAS were highest with primary partners and less so for casual partners and commercial partners, further confirming previous study findings[2] and reports on relationship intimacy as a barrier to condom use and risk reduction.[19] Earlier focus group findings suggested that social and psychological factors contribute to sexual risk behaviors with different partner types.[14,15] In the context of sex with primary partners, focus group participants described intense need for affection and personal connection, and stated that condoms undermined feelings of intimacy and threatened the connection with primary partners. In the context of sex with casual partners, participants described feelings of gender validation and attractiveness associated with receiving sexual attention from men. Most participants endorsed 100% condom use rules with customers, whom they viewed as business clientele rather than intimate partners. However, economic pressures compelled many to compromise their condom rules and engage in unsafe sex for increased money. Quantitative findings thus corroborate the need for prevention strategies to target the relationship context of sex—whether with a primary partner, with a casual date or 1-night stand, or with a partner who pays for sex.

Ethnic differences in HIV-related sexual risk behaviors corroborated previous epidemiological research.[2] African Americans in our sample had the highest rates of HIV and also reported frequently engaging in multiple risk behaviors including sex under the influence of drugs and unprotected sex with commercial sex partners. Latinas were most likely to engage in sex work, reported high rates of having sex while under the influence of drugs, and reported the highest rates of receptive anal sex with all partner types (although this sexual behavior is not risky when condoms are used). It is worth noting that African Americans and Latinas also reported particularly adverse socioeconomic conditions, which should be considered when designing HIV prevention interventions.[8] In an expected finding, APIs showed a protective factor for HIV: they were the least likely among the ethnic groups to report any receptive anal sex with primary, casual, or commercial partners as well as having sex under the influence of substances. Furthermore, only 1 API sex worker reported recent URAS. Lower rates of risk behaviors, HIV, and STDs among APIs may be attributable in part to their higher education and income and lower likelihood of engaging in sex work.

Previous research on MTF transgender persons has shown that African American race was a significant predictor of HIV seroconversion (adjusted relative hazard ratio=5.0).[12] Our findings suggest that this seroconversion rate may be associated with URAS with commercial partners. Although a minority of our study participants reported engaging in URAS with commercial partners, African Americans were disproportionately likely to do so. In addition, low income was independently correlated with URAS with commercial partners. This corroborates our focus group finding that economically disadvantaged MTF transgender persons engage in unprotected sex for survival[15] and confirms that commercial sex clients offer to pay extra for sex without condoms.[20] HIV education programs that address the specific needs of African American MTF transgender persons, such as job training, housing, and substance abuse treatment and mental health services, are critically needed.[16]

Urgent Need for Transgender-Sensitive HIV and Substance Use Interventions

Although MTF transgender persons of color may represent an extremely high-risk strata and a subpopulation within a minority group, practical steps toward addressing these health outcomes are currently underway. Several community-based programs in San Francisco have launched culturally sensitive, transgender-specific HIV/AIDS prevention and care programs and substance abuse treatment programs. Several ethnic-specific community-based agencies (e.g., African American, Latino, and Asian/Pacific Islander AIDS service organizations) have enhanced their transgender-specific outreach, support groups, and educational training programs conducted by transgender staff. Local substance abuse treatment organizations and public health clinics have also increased their sensitivity to transgender health and social issues, and some have hired transgender service providers and counselors to offer transgender-specific programs. Another evidence-based transgender HIV prevention intervention in Minnesota has been well documented.[21,22]

MTF transgender-specific health intervention programs should be implemented in other metropolitan areas (e.g., Los Angeles, New York, Washington, DC, Boston, Chicago).

It is important to train health service providers on transgender sensitivity and health issues.[11,16] This might be particularly important for public health clinics and social service agencies, where transgender persons of color may feel uncomfortable using services because of previous racial and gender insensitivity toward transgender persons.[16] Hiring qualified transgender staff can provide a critical link to the community and enhance trust for transgender clients.

Limitations

This sample may not represent MTF transgender persons in general. Respondents were recruited in San Francisco, where a large transgender community might contribute to a higher prevalence of substance use and sexual activity (including sex work) than elsewhere. Although self-reports of sexual behaviors and drug use tend to be reliable,[23,24] respondents may have minimized their reported risk behaviors. Nevertheless, these data from a large, diverse sample shed light on risk behaviors among a group about which little is known.

CONCLUSIONS

Responses from the public health community are vital to improve the health of MTF transgender persons of color—a population already at risk because of discrimination; victimization; and lack of access to education, employment, health care, and housing. Many public health surveillance measures (e.g., HIV reports issued by the Centers for Disease Control and Prevention) classify MTF transgender persons with homosexual men or men who have sex with men. Our findings suggest they warrant a specific demographic category. Indeed, the San Francisco Department of Public Health has classified MTF transgender persons since 1996. Service organizations must provide programs sensitive to the needs of the multicultural MTF transgender community. In addition, health care and service providers must be trained on the epidemiological, social, psychological, and cultural factors that make this community vulnerable to HIV and substance abuse. To provide effective health services for MTF transgender persons, professionals must accept the diversity within gender identity, appreciate differences associated with culture and sexual orientation, and advocate for transgender clients' basic health and human rights. ■

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Contributors

T. Nemoto conceived the study and supervised all aspects of its implementation and analysis. D. Operario was involved in analysis, interpretation, and manuscript preparation. J. Keatley coordinated the study implementation. L. Han and T. Soma assisted with data management and analysis.

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Human Participant Protection

This study was approved by the University of California, San Francisco, committee on human research.

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